

Date: Monday, 10/23/2006 12:05:41 PM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: CROSSTUBE EXTRUSION (206B)
Job Number	: 29115		
Estimate Number	: 10024		
P.O. Number	: N/A	Part Number	: D6001105
This Issue	: 10/23/2006 S.O. No. : N/A	Drawing Number	: D6001 REV A
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: N/A Type : RMA	Drawing Revision	: A
Previous Run	: 25661	Material	: N/A
Written By	:	Due Date	: 1/30/2007
Checked & Approved By	: <u>06 10 23</u>	Qty:	35 Um: Each
Comment	: Est Rev:B 00.12.06 Added: Issue P/O EC		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	PG	PURCHASING
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Comment: PURCHASING

Issue P/O

2339

a) Extrude as per Dwg D6001

b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube

c) Minimum ultimate tensile strength = 77 ksi

d) Minimum tensile yield strength = 66 ksi

e) Material certification required

u 06-10-25

2.0	D6001105P	Crosstube
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Comment: Qty.: 1.0000 Each(s)/Unit Total: 35.0000 Each(s)  
 Crosstube

3.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Receive &amp; Inspect For Transit Damage

Ensure material certification is attached

Pc 7/3/23 (35)

4.0	QC6	DIMENSIONAL CHECK
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Comment: DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6001

En 07/03/26 (235)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: LD Date: 07/03/28  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 10/23/2006 12:05:41 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: CROSSTUBE EXTRUSION (206B)

Job Number: 29115

Part Number: D6001105

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

6.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

MAT -25 En 07/03/26

7.0

QC21

FINAL INSPECTION/W/O RELEASE



(35)

Comment: FINAL INSPECTION/W/O RELEASE

07/03/28

Job Completion



W 07/03/27

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

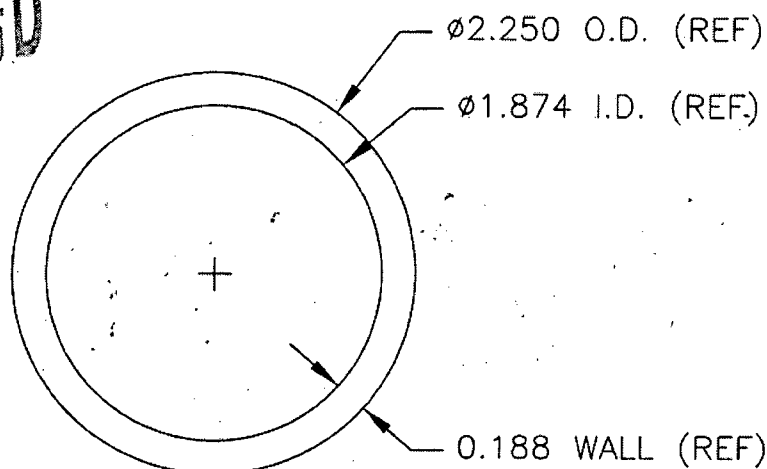
**NOTE:** Date & initial all entries



DESIGN CP	DRAWN BY CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D6001	REV. A SHEET 1 OF 1
DATE 00.11.22		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.22	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

RELEASED  
0.11.24



### NOTES

- 1) D6001-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 105" LONG TUBE: D6001-105

- 2) MATERIAL: 2.250 OD x 0.188 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.006$  MEAN ( $\pm 0.012$  INCLUDING OVALITY)  
WALL:  $\pm 0.006$  MEAN ( $\pm 0.019$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.125/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

SHOP COPY  
RETURN TO  
ENGINEERING  
INCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 29115

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ON

Kanada

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fax +49 (0) 23 03-206-116

Petra@aluminiumwerk.com  
www.aluminiumwerk.com

page: 1  
date: 11.02.2006  
customer: 40980

## order confirmation

## 21531

your PO dated: 10.25.2006  
your PO No.: PO 00002339  
your ref.: Linda Lacelle

contact: Petra Eisenblätter  
Tel.: +(303) 755 5672  
Fax: +(303) 755 5936

representative: CLAUD J. BETTER

We supply acc. to our delivery terms and conditions:

item	quantity	unitprice	USD	unit value	USD	delivery
001	35,000	PC	172,12	PC	6.024,20	March 16, 2007

AWU article: 19794 / Tariff no. 76082081  
Customer article: D6001-105 2.250 X 0.188 X 105  
product: TUBES / seamless extruded / EN AW-7075 / round  
condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	2,250 INCH Tol.	+0,012	-0,012
tol. for mean OD		+0,006	-0,006
inner diameter:	1,874 INCH		
wall thickness:	0,188 INCH Tol.	+0,019	-0,019
fixed length	105,000 INCH Tol.	+0,125	

inspection cert. acc. to EN10204/3.1 / RM 531 / Rp0,2: 455  
straightness 0,01 INCH / 1 FEET / RMS outer 25  
tol. on quantity +15 % -15 %  
2.250" OD 0.188" Wall, 105" lengths  
Part Number D6001-105 crosstube  
Surface Finish max. RMS 25  
Tolerances per ASTM B210 / your drawing D6001

Commerzbank AG, Unna  
Konto-Nr. 102 56 00 · BLZ 443 400 37  
S.W.I.F.T. - Code: COBADE FF 443  
IBAN: DE 90 4434 0037 01025600 00

Sitz der Gesellschaft: Unna  
Amtsgericht Hamm. HRB 3045

Vorstand: Volker Findeisen (Vors.)  
Thomas Wiese  
Vorsitzende des Aufsichtsrats: Irene Wiese

# Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

**Kunde:** Dart Aerospace Ltd.

**Client:**

1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada

**Produkt:** Rohre nahtlos gepresst

**Product / Produit:** Tubes seamless extruded

**Spezifikation:** AMS - QQ - A - 200/11E

**Specification:**

**Werkstoff:** 7075

**Alloy/Alliage:**

**Abmessung** 2,250 INCH x 1,874 INCH x 0,188 INCH x 105,000 INCH  
**Size / Dimension** D6001-105

**Kennzeichnung** ALUnna-Cert No.194/07-7075-T6511-Cast No.7134-AMS-QQA-200/11-2.250" Od x 0.188"Wall-Heat No.912/01-  
**Marking/Marquage:** Lot21531/1-1-P.O.00002339

**Lieferung**

**Delivered Material / Matériel délivré:**

pcs.

34

**Zustand:**

**Temper/Etat**

T 6511

**Country of Manufacture: Germany**

## 1. Chemische Analyse Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
7134/06	0,115	0,214	1,504	0,101	2,451	0,193	5,670	0,041	0,004	0,0209	0,0001	0,0016	0,0001

**Hydrogen content:** 0,12 ccm/100 g Al

Elements without indication < 0,01 %

## 2. Mechanische Eigenschaften Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min.	77,0	66,0				
max.						
1	82,650	73,225	11,0		175	912/01 - 34 pcs.

RMS: outside 25 - max. 13 µ"

### Ergebnis der Prüfungen:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

**Test results:**

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

**Resultats:**

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

KroosD



Certified acc. to DIN EN ISO 9001:2000, valid until 2009-03-27  
Certificate No.: 001959 QM



ALUnna

Abnahmebeauftragter

15.02.2007

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

## Packinglist ALUnna AG

<b>Customer PO</b>	<b>P.O.00002339</b>
<b>ALUnna ref. no.</b>	<b>21531/1</b>
<b>Date:</b>	<b>02.15.07</b>

**Boxmarking:**

Dart Aerospace P.C.00002339 Box No...	
D6001-105	Made in Germany
Dest.Hawkesbury ONT Canada	

**We hereby declare that the wooden packing material are totally free from bark and apparently**

**Free from live plant pests**

Free from live plant pests										Box dimension		
Item no.	Box no.	OD (inch)	ID (inch)	Wall (inch)	Net Weight (lbs)	Tare lbs	Gross Weight	Pieces	lengths (ft)	Lengths (inch)	Width (inch)	height (inch)
1	1	2,250	1,874	0,138	461	236	697	34	9	151,575	22,441	22,441
					461	236	697	34		1,251 m³		